



Department of Defense Update

Myalgic Encephalopathy / Chronic Fatigue Syndrome Advisory Committee

JUNE 20-21, 2018

Christopher L. Tracy, MD, FACP, FACR
Lieutenant Colonel
U.S. Army Medical Corps



Introduction

- Director of Rheumatology Services
 - Womack Army Medical Center
 - Assistant Professor of Medicine

- Goals
 - Promote DoD initiatives
 - Collaborative Research
 - Improve Force Health
 - Education & Clinical Support



Introduction

- Research initiatives throughout the DoD
- Challenges within the Department of Defense



Funded Medical Research

- Combat casualty care program (CCCRP)
- Clinical and rehabilitative medicine research program (CRMR)
- Military operational medicine research program (MOMRP)
- US Army Medical Materiel Development Activity (USAMMDA)
- US Army Medical Materiel Agency (USAMMA)
- Congressional directed medical research program (CDMRP)



Congressionally directed medical research program

- Previous Research
- Current Research



Congressionally directed medical research program

- Previous Research
 - FY09: Breast Cancer Research Program
 - Human retrovirus XMRV and development of breast cancer



Congressionally directed medical research program

- Previous Research
 - Peer Reviewed Medical Research Program FY03, FY06, FY11
 - Relationship to gulf war illness, vaccination history, systemic lupus
 - Genetic and immune profiling



Congressionally directed medical research program

- Current Research
 - Gulf War Illness Research Program



Gulf War Illness Research Program

- GWIRP studies that include ME/CSF cohort

Log Number: [GW080053](#)

PI/Institution: James Baraniuk, MD/ Georgetown University

Title: Exercise-Induced Cerebrospinal Fluid Proteomic Biomarkers of Fatigue

CFS-related Outcome: Hypothesized that acute physiological stress (exercise) would exacerbate symptoms and identify the predominant mechanisms associated with CFS and/or GWI. All GWI subjects in the study also met criteria for CFS. Found distinct differences between GWI, CFS and control subjects. *Notable publication: Rayhan RU, Stevens BW et al. 2013. Exercise challenge in Gulf War Illness reveals two subgroups with altered brain structure and function. PLoS One 8(6):e63903.*



Gulf War Illness Research Program

- GWIRP studies that include ME/CSF cohort

Log Number: [GW080152](#)

PI/Institution: Nancy Klimas, MD/ VA Medical Center, Miami, FL

Title: The Use of Comprehensive Molecular Profiling with Network and Control Theory to Better Understand GWI and Model Therapeutic Strategies

CFS-related Outcome: Found fundamental differences in the disease processes underlying CFS and GWI. *Notable publication: Broderick G, Ben-Hamo R, Vashishtha S et al. Altered immune pathway activity under exercise challenge in Gulf War Illness: An exploratory analysis. Brain, Behavior, and Immunity 28(2013); pp.159-69.*



Gulf War Illness Research Program

- GWIRP studies that include ME/CSF cohort

Log Number: [GW140140](#)

PI/Institution: Kimberly Sullivan, PhD/ Boston University

Title: Novel Autoantibody Serum and Cerebrospinal Fluid Biomarkers in Veterans with Gulf War Illness

CFS-related Outcome: Study includes 50 CFS subjects as a comparator group. Comparing biomarkers for GWI, CFS and IBS. Results to date showed that patients with CFS and IBS had lower levels of autoantibodies (AA) against fewer neural proteins, indicating that the levels of AA against neural proteins in these patients were lower than those seen in veterans with GWI.



Gulf War Illness Research Program

- GWIRP studies that include ME/CSF cohort

Log Number: [GW140064](#)

PI/Institution: James Baraniuk, MD/ Georgetown University

Title: START and STOPP in GWI

CFS-related Outcome: Study is ongoing and is an expansion of GW080053. To date found distinct mechanisms for post-exertional malaise in CFS and phenotypes of GWI. *Notable publication: Baraniuk, J and Shivapurkar, N. Exercise-induced changes in cerebrospinal fluid miRNAs in Gulf War Illness, Chronic Fatigue Syndrome and sedentary control subjects. Nature Scientific Reports 7 (2017), Article 15338.*



Gulf War Illness Research Program

- GWIRP studies that include ME/CSF cohort

Log Number: GW170103

PI/Institution: Brahmajothi Mulugu, PhD/ Duke University

Title: Novel Combinatorial Screening for NTFs, NPCs, MMPs, and CCs in Relevance to Autoantibodies in the Serum and CSF of Veterans with GWI.

CFS-related Component: Recently recommended for funding. Undergoing negotiation prior to award. Will validate AA findings under GW140140 using samples from CFS patients as reference controls.



Unfunded Medical Research

- Walter Reed National Military Medical Center, Bethesda
 - Anthrax vaccine protocol

eIRB Number: 20641

PI/Institution: Dr. Limone Collins, Walter Reed National Military Medical Center

Collaboration with Dr. Judith James/ Oklahoma Medical Research Foundation

Title: Molecular and Immunologic Analysis of Anthrax Vaccine Immune Responses in the Context of Adverse Events

CFS-related Component: This study seeks to improve understanding of the human immune response variability to the current anthrax vaccine in the context of biologic and genetic determinants, at the level of the humoral immune response, as well as the risk for adverse events like large local reactions, prolonged myalgia & arthralgia syndromes, fatigue and headache that interfere with function after vaccination in certain individuals.

Eleven peer reviewed publications since 2002.



Challenges

- Fostering research interest



Questions
